

## PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2000-162750

(43)Date of publication of application : 16.06.2000

(51)Int.Cl.

G03C 7/407

G03C 1/035

G03C 7/44

(21)Application number : 10-341412

(71)Applicant : CHUGAI PHOTO CHEMICAL CO LTD

(22)Date of filing : 01.12.1998

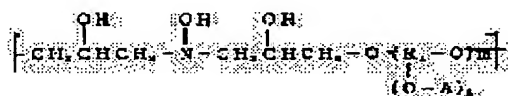
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## (54) METHOD FOR PROCESSING SILVER HALIDE COLOR PHOTOGRAPHIC SENSITIVE MATERIAL

## (57)Abstract:

PROBLEM TO BE SOLVED: To prevent deterioration of preservable property and color developing density and occurrence of fog even in the case of reducing a replenishing amount to a developing solution for the silver halide color photographic sensitive material.

SOLUTION: This silver halide color photographic sensitive material containing a silver halide emulsion high in silver chloride content is developed with the color developing solution containing a compound represented by formula I and replenished with a replenishing solution containing a sulfite concentration of  $\leq 5 \times 10^{-3}$  mol in a replenishing amount of  $< 80$  ml/m<sup>2</sup>. In formula I, R1 is an alkylene or alkan-tri-yl group optionally substituted by a 2-8C alkyl group and in the case of the alkylene group, l is 0, and in the case of the alkan-tri-yl group, l is 1, and when l is 1, A is a polymer represented by formula; and formula I becomes a 3-dimensional structure; (m) is an integer of 0-30; and (n) is an integer of 10-10,000.



## LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

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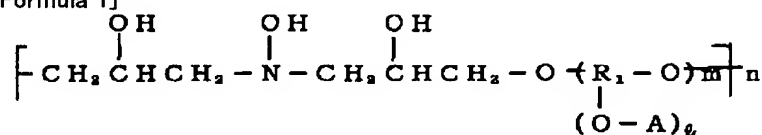
## CLAIMS

## [Claim(s)]

[Claim 1] The art of the silver-halide color photography sensitive material characterized by the following It is the high silver chloride silver-halide emulsion with which the aforementioned silver-halide color photography sensitive material consists of a silver chloride more than 90% mol in the art of the silver-halide color photography sensitive material which processes this color development liquid continuously while filling up a replenisher in case the exposed silver-halide color photography sensitive material is developed with the color development liquid containing P-phenylenediamine system color development chief remedy. The aforementioned color development liquid is a compound shown by the following general formula [I] (\*\* 1). The sulfurous-acid concentration of the replenisher of color development liquid is 5xten - three mols or less, and the amount of supplements is less than two 80 ml/m.

General formula [I]

[Formula 1]



The alkylene machine or alkane Trier machine which may be replaced by the alkyl group of carbon numbers 2-8 is shown, in the case of an alkylene machine, l is set to 0, and, in the case of an alkane Trier machine, it is set to 1 by the inside R1 of a formula. When l is 1, A shows the polymer expressed with a general formula [I], and a general formula [I] serves as the three-dimensional structure. m shows the integer of 0-30. n shows the integer of 10-10000.

[Translation done.]

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DETAILED DESCRIPTION

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## [Detailed Description of the Invention]

[0001]

[The technical field to which invention belongs] About the art of silver-halide color photography sensitive material, even if this invention decreases the amount of supplements in detail about the art of the color development liquid which can be stably processed also especially at the time of consecutive processing of the color development, and the silver-halide color photography sensitive material using it, it relates to the art of the silver-halide color photography sensitive material which forms continuously the stable color photography picture which cannot be easily influenced by the throughput of sensitive material.

[0002]

[Description of the Prior Art] The rinse processing replace sensitive material with to bleaching fixing processing in which color development processing, silver bleaching processing, silver-halide fixing processing, bleaching processing, and fixing processing are simultaneously performed after image exposure, rinsing processing, and rinsing processing, stabilization, and dryness processing are primitive operation, in addition down stream processing added in order to use it to each processing liquid, since the physical intensity of the sensitive material after processing is increased, and since stability increases is in processing of color-photography sensitive material.

[0003] Processing of the silver-halide color photography sensitive material used now is the method of obtaining a color-print from a negative color film, and also has a method of obtaining the positive color film and print which otherwise acquire the direct last picture, and these down stream processing has the fundamental art by which monochrome development was added to the process which obtains a negative color film or a color-print. [ many ] Furthermore, since a print is wanted to be made for a short time and it corresponds to this from a request that the user of a color-print wants to see a print early, speeding up of processing is needed.

[0004] In recent years, as for processing of silver-halide color photography sensitive material, quick processing is attained by improvement of sensitive material. Furthermore, in processing, a lot of processings are simply attained by the auto-processor, and small and a cheap next door number many of machines are collectively used by development of an auto-processor. An aromatic primary-amine system color development chief remedy [ like a p phenylenediamine ] whose color development liquid used for processing of silver-halide color photography sensitive material is is used. As preservatives for preventing air oxidation of this color development chief remedy etc., an additive is used alkali-metal salts, such as carbonic acid and a phosphoric acid, and hydroxylation alkali, an inhibitor, a water quality softener, and if needed [ other ] as alkali chemicals for maintaining a sulfite and a hydroxylamine, and color development liquid at alkali.

[0005]

[Problem(s) to be Solved by the Invention] In order that the silver-halide color photography sensitive material for color papers may enable quick processing, the salt silver-bromide emulsion with the high rate of a use rate of a silver chloride is used. In the hydroxylamine for which the salt silver-bromide sensitive material with the high ratio of this silver chloride has been used until now, coloring concentration will become low. For this reason, when only the sulfite which is the same preservatives is used, although the stability of color development liquid is maintainable to some extent, with the color development liquid with which processing progressed and time passed, generating of fogging cannot be and use it. Moreover, although stability increases by making [ many ] an addition, in a hydronalium SHIKIRU amine, coloring concentration will become the same low.

[0006] Instead of such a situation to a hydroxylamine, combined use of use [ of N and N-diethylhydroxylamine ] or N, and N-diethyl hydronalium SHIKIRU amine and a sulfite is common. Although this N and N-diethylhydroxylamine are not like a hydroxylamine, it has the property to reduce coloring concentration similarly. Furthermore, N and N-diethylhydroxylamine has a bad unique odor especially, and when processing is performed at a part of general store called so-called mini-laboratory, this odor is a matter with desirable not being desirable and removing from an environmental point also to processing.

[0007] On the other hand, processing is performed, an auto-processor being used and filling up required processing liquid as a replenisher in processing of sensitive material in these photographic processing, in order to process a lot of photographs quickly simply. Although a certain state where time progress was carried out will differ from the time of beginning since this replenisher is prepared for every constant rate and time to be by the time it has used it passes, if such a thing arises, since change will arise in the quality of the processed photograph, the state of a replenisher must make stability of this replenisher good. Moreover, although the amount corresponding to the amount of replenishers filled up continuously is discharged, the processing liquid used in an auto-processor has a

certain passage of time too in the meantime, and the stability within this time progress is also required for it. [0008] Since the photographic-processing contractor from whom processing was requested from the photography person accompanies the inside of a short time at a request, it is necessary to process quickly especially and process speeding up of a processing agent is demanded. In order to perform the quick color development, color development liquid turns into processing liquid of high activity. In such a case, naturally, when degradation becomes intense and uses it for a long period of time, change of the content of composition arises, and processing liquid serves as generating of the dirt of a development activity fall, change of quality of image, and the whole paper, and cannot be satisfied. What is considered as these causes is accumulation of the matter eluted from degradation of the color development chief remedy and preservatives which are used, the fall of alkalinity, and the sensitive material processed further.

[0009] Furthermore, although the waste fluid corresponding to the throughput of sensitive material is generated when processing using an auto-processor Although the environmental influence by saving resources and waste will be considered, and waste volume will be reduced, namely, the quantity of the amount of supplements will be decreased Before the replenisher prepared when the quantity of the amount of supplements was decreased is used, time will be taken, time to pile up into an auto-processor further becomes long, and degradation of processing liquid will advance according to the time. This problem is serious for a photographic-processing contractor with especially few throughputs. Although addition of a sulfite is effective when there are few throughputs, when there are many throughputs conversely, the fall of coloring concentration will be caused.

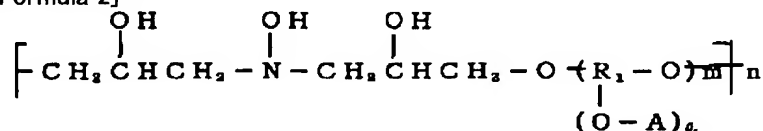
[0010] For example, various hydronalium SHIKIRU amine derivatives are proposed by the Japan patent No. 2620581 specification. Although the compound which does not contain an odor in part in respect of an odor is also indicated in these compounds, when the quantity of the amount of supplements is decreased, it cannot fully be satisfied [ with the point prevented effectively ] of oxidization of color development liquid. Moreover, the proposal of the macromolecule-ized hydronalium SHIKIRU amine derivative is made by the Japan patent base No. 2652503 specification. Although these compounds could also be satisfied in respect of the odor, when the quantity of the amount of supplements is decreased, it cannot fully be satisfied with the point of preventing oxidization of color development liquid effectively, and the color development liquid with which these compounds were used has further the fault which generates the insoluble matter which is not desirable, when carried out to bleaching fixing which is the continuing desilvering process. Moreover, in these compounds, although the macromolecule-ized hydroxylamine derivative which has ether linkage is indicated by the U.S. Pat. No. 5466565 specification, when the color development liquid with which it was used is carried out to bleaching fixing which is the continuing desilvering process, it has the fault which generates the insoluble matter which is not desirable.

[0011] Therefore, even if this invention person etc. decreases the quantity of the amount of supplements of the replenisher of color development liquid, the \*\*\*\*\* of color development liquid is maintained. Without there being no fall of coloring concentration and there being no generating of fogging, and there being few odors and influencing coloring concentration by some of throughputs Furthermore, it is what found out solving these troubles by processing by the specific art as a result of examining the art of the silver-halide color photography sensitive material which does not generate the insoluble matter in the continuing bleach fix bath, and resulted in this invention. The place made into the purpose is to offer the art of the silver-halide color photography sensitive material with which a photograph performance is obtained by always being stabilized, even if it loses these problems and decreases the quantity of the amount of supplements.

[0012]

[Means for Solving the Problem] The above-mentioned purpose of this invention the exposed silver-halide color photography sensitive material In the art of the silver-halide color photography sensitive material which processes this color development liquid continuously while filling up a replenisher in case negatives are developed with the color development liquid containing P-phenylenediamine system color development chief remedy The aforementioned silver-halide color photography sensitive material contains the high silver chloride silver-halide emulsion which consists of a silver chloride more than 90% mol. the aforementioned color development liquid The compound shown by the following general formula [I] (\*\* 2) was contained, and it was attained by the art of the silver-halide color photography sensitive material characterized by for the sulfurous-acid concentration of the replenisher of color development liquid being 5xten - three mols or less, and the amount of supplements being less than two 80 ml/m. General formula [I]

[Formula 2]



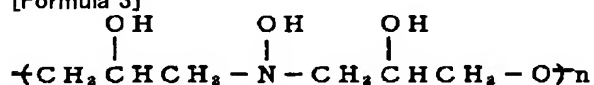
The alkylene machine or alkane Trier machine which may be replaced by the alkyl group of carbon numbers 2-8 is shown, in the case of an alkylene machine, l is set to 0, and, in the case of an alkane Trier machine, it is set to 1 by the inside R1 of a formula. When l is 1, A shows the polymer expressed with a general formula [I], and a general formula [I] serves as the three-dimensional structure. m shows the integer of 0-30. n shows the integer of 10-10000.

[0013]

[Embodiments of the Invention] The gestalt of operation of this invention is explained in detail below. The example

of the concrete compound of the general formula [I] used for this invention is given. However, this invention is not limited to these compounds. [I-1]

[Formula 3]



[I-2]

[Formula 4]



[I-3]

[Formula 5]



$$m = 5 \sim 10$$

[I-4]

[Formula 6]



$$m = 10 \sim 20$$

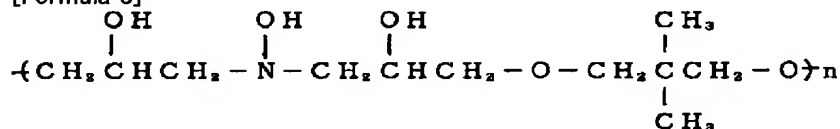
[I-5]

[Formula 7]



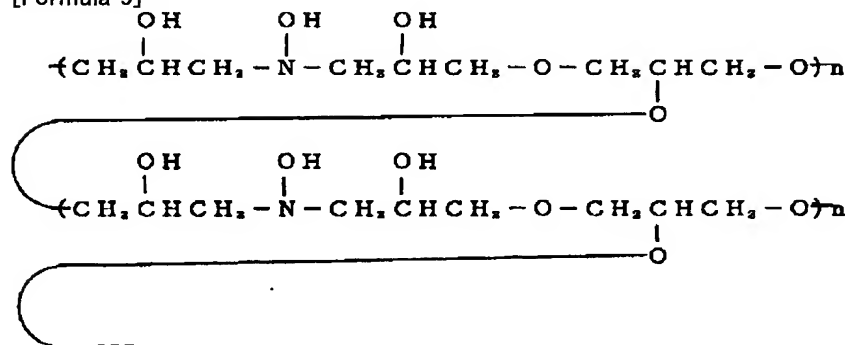
[I-6]

[Formula 8]



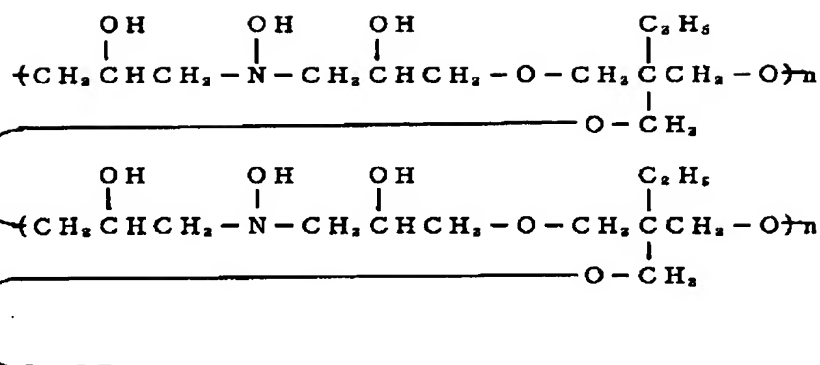
[I-7]

[Formula 9]



[I-8]

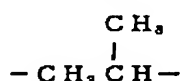
[Formula 10]



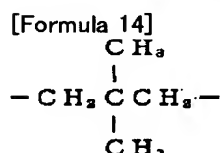
[0014] The alkylene machine which may be replaced by the alkyl group in a compound shown by the general formula [I] shows the bivalent basis guided except for every one hydrogen atom from the carbon atom of both \*\*\*\* of the normal paraffinic hydrocarbon which may be replaced by ARUKIRUKI, and is in a concrete target. [Formula 11]

$$-CH_2-CH_2-$$

[Formula 12]

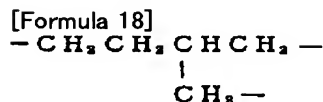
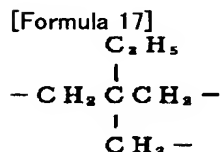
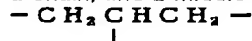


[Formula 13]  
 $-CH_2-CH_2-CH_2-$



[Formula 15]  
 $-\text{CH}_2-\text{CH}_2-\text{CH}_2-\text{CH}_2-$

\*\*\*\* is mentioned. An alkane Trier machine shows three carbon atoms which have a residual valence in the ends of a chain, and a middle carbon atom, or the trivalent basis beyond it, and is in a concrete target. [Formula 16]



\*\*\*\* is mentioned. The compound shown by the general formula [I] may be a copolymer which contains these bases two kinds or more than it.

[0015] Explanation of these bases is indicated by the foundation of organic chemistry, naming of an another volume I organic compound, 15 pages (1994), and Baifukan Co., Ltd. Issue. The compound shown by the general formula [I] used for this invention is easily compoundable by the known method. As a typical example "it is oxidation reaction of the secondary amine using hydrogen peroxide solution given in journal OBU chemical saucer IATI (J. Chem.Soc.), 75 and 1009 (1899), J.Chem.Soc., 1963, and 3144 grades. The Co-op elimination reaction of the amine oxide of a publication and the substitution reaction to the general alkyl halide of a hydroxylamine, the addition part reaction to the olefin of a hydroxylamine, and the ring opening reaction of a hydroxylamine and an oxirane compound are mentioned to journal OBU chemical saucer IATI (J. Chem.Soc.), 79,964 (1957), J.Chem.Soc., 1955, and 769 grades.

[0016] Hereafter, an example of the synthetic method of a general formula [I] compound is given. Synthetic diethylene-glycol diglycidyl ether 174g (1.0 mols) of a compound (I-2) and 66g (1.0 mols) of 50% hydroxylamine solution were mixed with 450ml of water, and heating churning was performed at 60 degrees C for 2 hours. When asked for the concentration of the hydroxylamino machine in the obtained solution by the Fehling's

solution, it was checked that the hydroxylamino machine (0.109 mols / 100g) is contained. Moreover, not remaining was checked when the unreacted hydroxylamine was \*\*\*\*\*ed) to \*\*\*\*\*. The obtained solution does not almost have an odor. P-phenylenediamine system color development chief remedy used for the color development liquid of this invention is indicated after 545 page of processing (Modern Photographic Processing). 1979. John Willie [ of Journal of American Chemical Society (J. Am.Chem.Soc.) 73.3100 (1951) and a high strike (Haist), and a present age photograph ] -, and - Suns (John Wileyand Sons) . New York .

[0017] The desirable example of a compound used for this invention is shown below.

(A-1) 4-amino-3-methyl-N-diethylaniline hydrochloride (A-2) 4-amino-N-ethyl-N-(beta-hydroxyethyl) aniline sulfate (A-3) 4-amino -3 - Methyl-N-Ethyl-N- (beta-methyl sulfonamide ethyl) Aniline 3 / disulfuric acid salt 1 hydrate (A-4) 4-amino -3 - Methyl-N-ethyl-N-(beta-hydroxyethyl) aniline sulfate 1 hydrate 4-amino-3- (A-5) (beta-methyl sulfonamide ethyl)-N-diethylaniline hydrochloride (A-6) 4-amino-N-ethyl-N-(beta-methoxy ethyl) aniline and 2 para toluenesulfonic-acid salt (A-7) 4-amino-N-butyl-N-(beta-sulfonic-acid butyl) aniline sulfate

[0018] The various components usually used for the color development liquid used for this invention For example, a potassium hydroxide, a sodium hydroxide, potassium carbonate, a sodium carbonate, Alkali chemicals, such as potassium phosphate and sodium phosphate, a sodium sulfite, Potassium sulfite, a sodium hydrogensulfite, a potassium hydrogensulfite, the sodium metabisulfite, Sulfites, such as potassium metabisulfite, a hydrogensulfite, a metabisulfite, Potassium chloride, a sodium chloride, a potassium bromide, a sodium bromide, a potassium iodide, Halogenated compounds, such as a sodium iodide, an amino polycarboxylic acid, a polystyrene sulfonic acid, Thickening agents, such as a water-softening agent, ethylene glycol, a diethylene glycol, a diethanolamine, and a triethanolamine, and accelerators, such as a PORIHOSU phon acid, can be made to contain.

[0019] Moreover, compounds, such as a nitrobenzo imidazole, a mercapto benzimidazole, a 5-methyl-benzotriazol, and a 1-phenyl-5-mercapto tetrazole, a stain inhibitor, a sludge inhibitor, etc. are used as the various surfactants aiming at the soluble improvement in refractories, such as a fluorescent brightener aiming at the improvement in white, and a color development chief remedy, and also an additive. Moreover, although quick processing is attained by generally raising pH to some extent although it is desirable to be used by pH 9 and 5 or more as for the color development liquid of this invention, it deteriorates by the passage of time and becomes the cause of contamination of fogging or the base.

[0020] The bleaching agent used for the bleach liquor used for this invention is the metallic complex of an organic acid, and are metals, such as organic acids, such as an amino polycarboxylic acid and a citric acid, iron, cobalt, and copper, as this complex salt. As most desirable organic acid used in order to form the metallic complex of such an organic acid, there may be a polycarboxylic acid and these polycarboxylic acids or an amino polycarboxylic acid may be an alkali-metal salt, an ammonium salt, and a water-soluble amine salt. these -- an example -- \*\*\*\*\* -- ethylene-diamine-tetraacetic acid -- one -- three -- -- a propylenediamine -- a tetrapod -- an acetic acid -- a diethylenetriaminepentaacetic acid -- ethylenediamine -- -- N -- - (beta-oxy-ethyl) -- -- N -- N -- ' -- N -- ' -- -- TORI -- an acetic acid -- a propylenediamine -- a tetrapod -- an acetic acid -- a nitrilotriacetic acid -- iminodiacetate -- a cyclohexanediamine -- a tetrapod -- an acetic acid -- dihydroxyethyl -- a glycine -- a citric acid -- ethyl ether -- a diamine -- a tetrapod -- a

[0021] As a halogenating agent, a halide acid and the alkali-metal salt of a halogen, and an ammonium salt are common, and a hydrochloric acid, a hydrobromic acid, etc. are a sodium chloride, potassium chloride, an ammonium chloride, a sodium bromide, a potassium bromide, an ammonium bromide, etc. as these examples. As a buffer, it is used combining a weak acid and an inorganic organic acid, and inorganic alkali chemicals. As an inorganic weak acid, as carbonic acid, a boric acid, a phosphoric acid, and an organic acid, it is an acetic acid, a citric acid, a maleic acid, a succinic acid, etc., and they are a sodium carbonate, potassium carbonate, an ammonium carbonate, the sodium borate, a boric-acid potassium, boric-acid ammonium, sodium phosphate, potassium phosphate, ammonium phosphate, sodium acetate, potassium acetate, an ammonium acetate, a sodium citrate, a potassium citrate, an ammonium citrate, the sodium succinate, the pottassium succinate, succinic-acid ammonium, maleic-acid ammonium, etc. as these examples.

[0022] Furthermore, the additive for a bleaching promotion operation can be used. The example of use is indicated by JP,54-35727,A, JP,60-12549,A, JP,60-76745,A, JP,60-95540,A, JP,2-103041,A, etc. about these add-in material.

[0023] As a buffer, it is used combining a weak acid and an inorganic organic acid, and inorganic alkali chemicals. As an inorganic weak acid, as carbonic acid, a boric acid, a phosphoric acid, and an organic acid, it is an acetic acid, a citric acid, a succinic acid, etc., and they are a sodium carbonate, potassium carbonate, an ammonium carbonate, the sodium borate, a boric-acid potassium, boric-acid ammonium, sodium phosphate, potassium phosphate, ammonium phosphate, sodium acetate, potassium acetate, an ammonium acetate, a sodium citrate, a potassium citrate, an ammonium citrate, the sodium succinate, the pottassium succinate, succinic-acid ammonium, etc. as these examples.

[0024] The bleaching agent used for the bleach fix bath used for this invention is a bleaching agent used with the aforementioned bleach liquor, a fixer is a fixing agent used with the aforementioned fixer, and a buffer is a buffer used with the aforementioned bleach liquor and a fixer. Furthermore, the additive for promoting bleaching fixing can be used. These additives are indicated by JP,45-8506,B, JP,45-8836,B, JP,46-280,A, JP,46-556,B, JP,49-42349,A, JP,53-9854,B, JP,54-71634,A, the Belgium patent No. 770910, etc.

[0025] Rinsing processing by this invention is performed by the stabilizing treatment replaced with rinsing or it. In the case of the stabilizing treatment replaced with rinsing, pH of the stabilizer to be used is 5-8, and the buffer

which can be contained in stabilizing treatment liquid can use anythings of the alkali chemicals generally known or acid.

[0026]

[Example] Hereafter, although an example explains this invention in detail, thereby, this invention is not limited.

[Example 1] The color development liquid (A) of the composition shown below was prepared, and open neglect was performed among 1l. beaker and under the room temperature. The water of the part which evaporated was compensated after four weeks, and the amount of color development chief remedies which remains by the high performance chromatography was measured. The result is as being shown in Table 1.

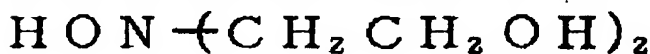
Color development liquid (A)

A diethylenetriamine pentaacetic acid 2.0g Sodium chloride 5.0g Potassium carbonate (anhydrous) 25.0g N-ethyl-N-(beta-methanesulfon amide ethyl)-3-methyl-4-amino aniline \*\* Acid chloride (color development chief remedy) 5.0g Triethanolamine 15.0g Fluorescent brightener (4 and 4'-diaminostilbene system) 2.0g (a high molecular compound based on a hydroxylamino machine) Compound given in Table 1 0.022 mols It added.

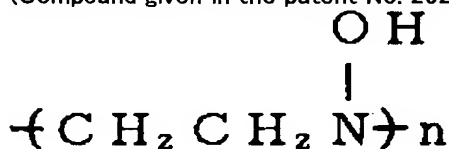
Water is added. 1.0l. pH (using a potassium hydroxide or a sulfuric acid) 10.05 [Table 1]

実験 No.	添加化合物	発色現像主薬残存率
1 (比較)	化合物 A	38 %
2 (比較)	化合物 B	52 %
3 (比較)	化合物 C	59 %
4 (本発明)	(I - 2)	78 %
5 (本発明)	(I - 4)	80 %
6 (本発明)	(1 - 6)	76 %
7 (本発明)	(I - 7)	77 %

Compound A Diethylhydroxylamine compound B [Formula 19]



(Compound given in the patent No. 2620581 official report) Compound C [Formula 20]



(Compound given in the patent No. 2652503 official report) It has ether linkage in the polymer principal chain of this invention, and the result of Table 1 shows that the polymer type hydroxylamine compound which hydronalium KISHIKI replaced by the polymer principal chain further has the outstanding residual effect which is not seen to N and N-dialkyl hydroxylamine or the mere polymer type hydroxylamine compound.

[0027] [Example 2] It processed with down stream processing and processing liquid of Table 2 after image exposure using the commercial color paper.

[Table 2]

処理工程	温度	時間	補充量	タンク容量
発色現像	37℃	45秒	表3に記載	24.2l
漂白定着	35℃	45秒	56ml	20.1l
安定 ①	35℃	20秒	—	15.5l
安定 ②	35℃	20秒	—	15.5l
安定 ③	35℃	20秒	—	15.5l
安定 ④	35℃	20秒	250ml	15.5l
乾燥	70~85℃	48秒		

The amount of supplements is expressed with the amount per two 1m of sensitive material. The stabilization



process was made into the counterflow method from \*\* to \*\* by four tanks.

[0028]

Color development liquid 160 ml/m<sup>2</sup> 60 – 80 ml/m<sup>2</sup> Tank liquid \*\* replenisher \*\* replenisher Water 800ml 800ml  
 800ml Diethylenetriamine pentaacetic acid 2.0g 2.0g 2.0g Sodium chloride 5.0g 1.5g 0.5g Potassium carbonate  
 (anhydrous) 25.0g 25.0g 25.0g Triethanolamine 12.0g 12.0g 12.0g fluorescent brightener (4) [ 4'-diamino ] Stilbene  
 system 2.5g 4.0g 4.0g A compound given in Table 2 0.022mol 0.055mol 0.066 mols Sodium sulfite 0.2g It indicates to  
 Table 3. It is a written N-ethyl-N-(beta-METANSU RUHON amide ethyl)-3-methyl-4-amino aniline sulfate to Table  
 3. 5.5g 8.0g water is added, and it is 1.0l. 1.0l pH (doing use of a potassium hydroxide or a sulfuric acid) 1.0l. 11.0g )  
 10.05 10.40 11.00 [0029]

A bleach fix bath Tank liquid Replenisher Water 600ml 600ml Ammonium thiosulfate (75%) 93ml 155ml An ammonium  
 sulfite and 1 monohydrate 27.0g 45.1g Ethylenediaminetetraacetic acid iron (III) ammonium 55.0g 91.2g  
 Ethylenediaminetetraacetic acid 4.5g pH 7.5g (using an acetic acid) Water is added. 1.0l. 1.0l. ) 6.00 5.50 [0030]

Slurry (tank liquid and a replenisher are common)

Water 900ml 2-amino benzothiazole 0.1g 1-hydroxy alkylidene -1, 1- Diphosphonic acid 4.0g Water is added. 1.0l.

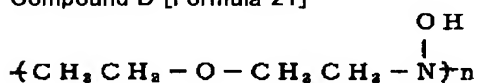
[0031] The throughput of sensitive material performed respectively little processing which will process color-paper  
 5m<sup>2</sup> on the 1st, and abundant processing processed two times 30m for 20 days. At the time of an end, the  
 commercial control strip was processed, using the reflected type concentration meter (X-RITE), the minimum  
 concentration and development speed of the sample of Magenta coloring matter of the unexposed section from  
 which fogging tends to pose a problem were slow, and it measured the highest concentration of the yellow  
 concentration out of which coloring concentration cannot come easily. Moreover, the existence of generating of the  
 insoluble matter in a bleach fix bath was checked visually. These results are shown in Table 3.

[Table 3]

実験 No.	亜硫酸 塩濃度 (mol)	ヒドロキ シルアミ ン類	補充量 (ml/m <sup>2</sup> )	少量処理 (5 m <sup>2</sup> /日)	
				マゼンタ濃度 (未露光部)	イエロー濃度 (最高濃度部)
8 比較	0	化合物A	160	0.03	2.48
9 比較	$8 \times 10^{-3}$	化合物A	80	0.06	2.47
10 比較	$6 \times 10^{-3}$	化合物C	80	0.04	2.47
11 比較	$6 \times 10^{-3}$	化合物C	60	0.06	2.48
12 比較	$6 \times 10^{-3}$	化合物D	60	0.04	2.47
13 本発明	$5 \times 10^{-3}$	I-2	60	0.02	2.48
14 本発明	$3 \times 10^{-3}$	I-4	60	0.03	2.48
15 本発明	$3 \times 10^{-3}$	I-6	60	0.02	2.48
16 本発明	$0 \times 10^{-3}$	I-7	60	0.03	2.49

実験 No.	多量処理 (30 m <sup>2</sup> /日)		漂白定着液 での不溶性 物質の有無
	マゼンタ濃度 (未露光部)	イエロー濃度 (最高濃度部)	
8 比較	0.02	2.49	無
9 比較	0.02	2.18	無
10 比較	0.02	2.40	有
11 比較	0.02	2.41	有
12 比較	0.02	2.41	有
13 本発明	0.02	2.45	無
14 本発明	0.02	2.48	無
15 本発明	0.02	2.49	無
16 本発明	0.02	2.47	無

Compound D [Formula 21]



(It indicates on U.S. Pat. No. 5466565 specifications)

[0032] When there are many amounts of supplements, even if it uses the conventional hydroxylamines, processing is possible irrespective of some of throughputs satisfactory, so that clearly from Table 3 (experiment 8). However, in having used the conventional hydroxylamines, when the quantity of the amount of supplements was decreased, when there are few throughputs, elevation of the Magenta concentration of the unexposed section is caused. Moreover, if it is going to raise sulfite concentration in order to suppress elevation of Magenta concentration, when there are many throughputs, the fall of yellow concentration will be caused. Moreover, a compound like the compound C compound D generates the insoluble matter in a bleach fix bath in macromolecule type hydroxylamines (experiments 9, 10, 11, and 12).

[0033] However, the macromolecule type hydroxylamines shown by the general formula [I] of this invention are understood that the stable processing is possible also in the low supplement of ml [ of less than / 80 //m ] two, without not needing addition of a sulfite but generating the insoluble matter in a bleach fix bath irrespective of some of throughputs (experiments 13-16).

[0034]

[Effect of the Invention] According to this invention, the macromolecule type man DOROKI sill amines shown by the general formula [I] in the color development are used like the above. Low supplement processing can be stably performed for silver-halide color photography sensitive material irrespective of some of throughputs. Since silver-halide color photography sensitive material can be processed in the state where the \*\*\*\*\* of color development liquid is maintained, and there is no fall of coloring concentration, and there is no generating of fogging, and there is no generating of the insoluble matter in a desilvering process and this color development liquid does not have an odor further It turns out that it can be used in the good state of an operating environment.

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[Translation done.]